WHAT IS CLAIMED IS:

1. (Currently amended) A method for measuring passive voltage contrast on a die, comprising:

providing a sample holder, the sample holder having a base and a supporting surface;

attaching a die to the supporting surface of the sample holder, the die having a first surface hosting a circuit and a second surface that is in contact with the supporting surface of the sample holder;

scanning the first surface of the die using a primary electron beam~~, the primary electron beam being~~ incident on the first surface at ~~a first~~ an incident angle ~~and~~, thereby generating a passive voltage contrast on the first surface; ~~and~~

adjusting the supporting surface of the sample holder to increase the incident angle ~~from the first angle to a second angle at which the passive voltage contrast is maximized~~; and

repeating the steps of scanning the first surface of the die and adjusting the supporting surface of the sample holder to increase the incident angle at least until an incident angle is reached at which the passive voltage contrast is maximized.

2. (Original) The method of claim 1, further comprising generating an image of the circuit when the passive voltage contrast is maximized, different portions of the image having different brightness corresponding to different passive voltages on the first surface of the die.

3. (Original) The method of claim 2, further comprising examining the portions of the image having an abnormal brightness to identify electrical failures in the die.

4. (Original) The method of claim 2, wherein the die is electrically connected to the ground through the sample holder.

5. (Original) The method of claim 4, wherein the circuit comprises at least a plurality of electrical components of a same type and one component whose brightness in the image is significantly different from that of others may be a defective component.

6. (Original) The method of claim 5, wherein there is an electrical shorting failure at the defective component if its brightness is higher than that of others in the image.

7. (Original) The method of claim 6, wherein there is an electrical open failure at the defective component if its brightness is lower than that of others in the image.

8. (Currently amended) The method of claim 1, wherein the ~~second~~ incident angle at which the passive voltage contrast is maximized is a function of the surface texture and surface composition of the die.

9. (Currently amended) The method of claim 1, wherein the ~~second~~ incident angle at which the passive voltage contrast is maximized is above 75°.

10. (Original) The method of claim 1, wherein the primary electron beam has an accelerating energy level of 1-5 KeV.

11. (Original) The method of claim 10, wherein the primary electron beam has an accelerating energy level of 2 KeV.

12. (Original) The method of claim 1, wherein the primary electron beam is generated by a scanning electron microscope.

13. (Currently amended) An apparatus for measuring passive voltage contrast on a die, comprising:

a container having a primary electron beam generator and a secondary electron collector; and

a sample holder having an adjustable base and a stand on the base, the stand having an oblique surface for holding a die that faces the primary electron beam generator and the secondary electron collector, the primary electron beam being incident on a surface of the die at an incident angle, the base being adjustable such that the ~~primary electron beam generator releases an electron beam that is incident upon a~~

~~location on the die surface at an angle of at least 75°~~ die surface can be moved through an incident angle that ranges from 45° to more than 75°.

14. (Original) The apparatus of claim 13, wherein the secondary electron collector is arranged to measure a secondary electron current at the location bombarded by the primary electron beam and the magnitude of the secondary electron current is a function of a local electrical field near the location.

15. (New) A method for measuring passive voltage contrast on a die, comprising:

attaching a die to a supporting surface of a sample holder, the die having a first surface hosting a circuit and a second surface that is in contact with the supporting surface of the sample holder;

scanning the first surface of the die using a primary electron beam incident on the first surface at an incident angle, thereby generating a passive voltage contrast on the first surface;

changing the incident angle; and

repeating the steps of scanning the first surface of the die and changing the incident angle until an incident angle is reached at which the passive voltage contrast is maximized.

16. (New) The method of claim 15, further comprising generating an image of the circuit when the passive voltage contrast is maximized, different portions of the image having different brightness corresponding to different passive voltages on the first surface of the die.

17. (New) The method of claim 15, wherein the incident angle at which the passive voltage contrast is maximized is above 75°.

18. (New) The method of claim 15, wherein the primary electron beam is generated by a scanning electron microscope.